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UM MICROBIOLOGIST ASSISTS BITTERROOT RANCHERS FIGHTING 'WEAK CALF SYNDROME'

By Vivian Todhunter
UM Information Services

MISSOULA--

A University of Montana associate professor of microbiology, Dr. Richard N. Ushijima, is helping Bitterroot Valley ranchers fight a disease which has been killing newborn calves and lambs in the valley for the last 10 years.

The disease has been dubbed "weak calf syndrome," "polyarthritis" and "Ward's Syndrome," after its discoverer, Hamilton veterinarian Jack Ward.

Weak calf syndrome also causes abortions and stillbirths but its main target is newborn animals, which exhibit any of a number of symptoms--listlessness, swollen joints, a cherry red muzzle and no apparent instinct for nursing. However, all of the symptoms are known to occur with other diseases, which makes it difficult for someone unfamiliar with weak calf syndrome to be certain a calf has that disease.

In the last few years, lambs also have been observed with symptoms of weak calf syndrome. According to one veterinarian, a sheep rancher in the valley had 60 abortions among his flock within a two-week period this spring. The symptoms were the same as those for weak calf syndrome.

The precise cause of weak calf syndrome is not known, but Ushijima, a virologist, is investigating the possibility that a virus causes the disease.

Various treatments have been tried, but none is completely satisfactory. Ushijima and Ward have tried taking blood from cows who have had diseased calves and using that blood for transfusions to other sick calves. Many calves given the transfusions live, but they become "poor-doers," which means they do not develop the weight or size of a normal animal.

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The expenditures necessary to save the calves can be too much for some ranchers. The eventual profit they may get will not be high enough to offset the cost.

But the biggest problem has been trying to interest scientists in doing research which could find the cause and cure of the disease. For years Ward had difficulty convincing other veterinarians and ranchers that their animals were dying from a new disease--one which had not been previously identified.

Since 1964 Ward has performed autopsies on calves who died from the disease and has made careful studies of its effects on the animals. He compared those effects to ones caused by other diseases with similar symptoms. Over the years he considered and dismissed every cattl disease that showed any resemblance to weak calf syndrome.

In the meantime, the disease spread throughout the Bitterroot Valley, finally affecting almost every cattle rancher in the area. Weak calf syndrome showed no distinction among types of livestock. Dairy cattle, cross-bred "exotic" cattle and even sheep suffered.

Philip Baden, who ranches north of Hamilton, cross-breeds Simmental cattle with Herefor and Angus. Four years ago he lost a few of his newborn calves "just out of the blue." A year later a three-quarter Simmental bull calf was born with the disease. Because of the calf's value, Baden and Ward worked for weeks to keep the animal alive. It died, and so did 35 per cent of Baden's newborn calves the following year.

"It hit me full-bore," Baden said. "Those calves were dying like flies."

Because Baden keeps precise records on his cattle he was able to trace the effect of weak calf syndrome on his herd. Not all calves contracting the disease died, but some were so weak they contracted other diseases. Those who survived were "poor-doers," who could, however, have normal calves.

Baden, Ward and Ushijima said the disease is infectious and appears to be transmitted through the saliva and urine of cattle. To offset this, Baden said he tries to keep his cattle from bunching up in pastures to reduce the spreading of weak calf syndrome among the animals.

But feeding and bad weather tend to make the animals group together, and in the winter of 1969, severe cold and bad weather contributed to what looked like an epidemic of the disease among both cattle and sheep in the valley.

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S. E. Taylor, Stevensville veterinarian, raises sheep. In 1969, his ewes gave birth to 73 lambs. Of those, Taylor was able to save 18. Some loss among newborn lambs is not uncommon, Taylor said, so other sheep ranchers who did not suffer disproportionate losses did little more than destroy the carcasses and write off any losses.

Taylor, however, had learned enough about weak calf syndrome from Ward to recognize its similarity to the disease that was killing his sheep. He and Ward "spent a lot of nights together doing postmortems" that winter.

By then, the disease also had spread to Idaho and other areas of Montana and researchers from the University of Idaho, Moscow, began comparing notes with Ward. Then, in 1970, the Bitterroot Stockmen's Association donated money so Ushijima could begin researching the problem.

Working with two former UM graduate students, Tom Januszewski and Cyril Jannke, Ushijima investigated weak calf syndrome and finally isolated the virus which he thinks could be the cause of the disease. Lack of time and money, however, has hindered his research, and he has not been able to test whether the virus can be induced into healthy cattle, which is one of the requirements in defining a disease.

Ushijima theorizes that the disease is contracted by the mother who infects the fetus. At what stage the fetus is infected determines whether or not the calf is going to be aborted.

Eventually, Ushijima thinks, some type of inoculation will prove to be the best solution but that solution may take a lot more research.

Some work already has been done by the researchers in Idaho, who have observed the disease in herds in the Salmon and Challis areas. Scientists at Montana State University, Bozeman, also have begun studying the disease, and researchers at the National Animal Disease Laboratory at Ames, Iowa, have sought information from Ushijima and Ward about it.

How long it will take to find a preventive, no one knows. As Ushijima observed, finding the problem and solving it is not a simple matter. Like the search for the cause and prevention of polio, it could take years.

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